CLAIMS

1. A working medium supply control system in a heat exchanger that carries out heat exchange between a high temperature heat medium whose thermal energy changes and a low temperature working medium flowing through the interior of a heat transfer tube (17), the system comprising:

a heat medium measurement sensor (S1, S2) for detecting the temperature (Tgas_in, Tgas_out), the pressure (Pgas_in, Pgas_out), and the mass flow rate (Ggas) of the heat medium;

a working medium measurement sensor (S3, S4) for detecting the temperature (Tsteam_in, Tsteam_out), the pressure (Psteam_in, Psteam_out), and the mass flow rate (Gsteam) of the working medium;

reference supply rate prediction means (M1) for predicting a future working medium reference supply rate (Gsteam_set) on the basis of values detected by the heat medium measurement sensor (S1, S2) and the working medium measurement sensor (S3, S4);

heat quantity change calculation means (M2) for calculating a heat quantity change per unit time (Qmas) of the heat transfer tube (17);

supply rate correction calculation means (M3) for calculating a working medium supply rate correction (dGsteam) on the basis of the heat quantity change (Qmas) calculated by the heat quantity change calculation means (M2); and

target supply rate calculation means (M4) for calculating a target working medium supply rate (Gsteam_target) on the basis of the reference supply rate (Gsteam_set) predicted by the reference supply rate prediction means (M1) and the supply rate correction (dGsteam) calculated by the supply rate correction calculation means (M3).

2. The working medium supply control system in a heat exchanger according to Claim 1, wherein the heat quantity change calculation means (M2) calculates the heat quantity change per unit time (Qmas) of the heat transfer tube (17) on the basis of values detected by the heat medium measurement sensor (S1, S2) and the working medium measurement sensor (S3, S4).

3. The working medium supply control system in a heat exchanger according to Claim 1, wherein the system further comprises a heat transfer tube temperature distribution measurement sensor (S5) for measuring a temperature distribution of the heat transfer tube (17), and the heat quantity change calculation means (M2) calculates the heat quantity change per unit time (Qmas) of the heat transfer tube (17) on the basis of a value detected by the heat transfer tube temperature distribution measurement sensor (S5).

4. The working medium supply control system in a heat exchanger according to any one of Claims 1 to 3, wherein the heat medium is exhaust gas of an engine (E).